REMARKS/ARGUMENTS

Claim Amendments

By the present amendment, claim 1 has been amended to clarify that the two or more components of the protein-based system are entrapped "within the matrix". Support for this amendment is found, for example, on page 8, lines 16-18, of the application as filed.

The claim amendments have been made without prejudice and without acquiescing to any of the Examiner's objections. The Applicants submit that no new matter has been entered by the present amendment and entry of the amendments is respectfully requested.

The Official Action dated November 2, 2006 has been carefully considered. It is believed that the claims submitted herewith and the following comments represent a complete response to the Examiner's comments and place the present application in condition for allowance. Reconsideration is respectfully requested.

35 U.S.C. §112

The Applicants acknowledge and appreciate the Examiner's withdrawal of her rejection of claims 1-3 and 5-21 under 35 U.S.C. §112, second paragraph.

35 U.S.C. §102(e)

The Applicants acknowledge and appreciate the Examiner's withdrawal of here rejection of claims 1-3, 5-13, 16-17 and 21 under 35 U.S.C. §102(e) as being anticipated by Zhang et al. (US Pub No. US2004/0249082, priority date August 23, 2003).

The Examiner has rejected claims 1-3, 9, 11-18 and 21 under 35 U.S.C. §102(e) as being anticipated by Um et al. (US Pub No. US2003/0124371, priority date November 8, 2001). The Applicants respectively traverse this rejection.

Um et al. disclose a water-swellable hydrophobic hydrogel (matrix) and analytical devices incorporating the hydrogel. Um et al. also disclose methods of using the hydrogel to detect an analyte in a sample comprising contacting the analyte with the hydrogel to allow capture of the analyte and detecting capture of the analyte. The Examiner contends that, since Um et al. teach that two or more components of a protein based system may be *attached* to the hydrogel (the hydrogel is taught to include those where over 100,000 different probe sequences are bound to distinct spots of hydrogel on a microarray), a person skilled in the art may construe this to mean that two or more components are *entrapped* on the matrix.

While not necessarily agreeing with the Examiner's construction of the present claims, the Applicants have amended claim 1, and accordingly, claims 2-3, 9, 11-18 and 21, dependent thereon to clarify that the two or more components of the protein-based system are entrapped "within the matrix".

Since Um et al. do not teach the entrapment a *multi-component* protein-based system *within* a biomolecule-compatible matrix the Applicants submit that claim 1, and accordingly, claims 2-3, 9, 11-18 and 21, which are all dependent on claim 1, are not anticipated by Um et al.

In light of the above, the Applicants request that the Examiner's rejection of claims 1-3, 9, 11-18 and 21 under 35 U.S.C. §102(e) be withdrawn.

The Examiner has rejected claims 1-3, 5-7, 16-18 and 21 under 35 U.S.C. §102(e) as being anticipated by Preininger (US Pub No. US2003/0040008, priority date April 12, 2000). The Applicants respectively traverse this rejection.

Preininger teaches a method for immobilizing an analyte on a solid surface, which is characterized by binding a cyclodextrin molecule having at least two functional groups to a solid surface in manner in which at least one functional group of the cyclodextrin molecule can still be covalently bound to an analyte and then covalently binding the analyte to the surface-bound cyclodextrin molecule. The Examiner contends that this reference teaches immobilizing or binding analytes such as DNA or enzymes to solid surfaces. Further, the Examiner contends that Preininger teaches microarrays for immobilizing DNA and a variety of analytes, which may be attached to the surface in a spatially precise manner.

The Examiner notes that the claims do no recite the limitation that the two or more components of the protein-based system be "co-entrapped" within the matrix, according, the Examiner contends that Preininger can be interpreted in such a way so as to read on the present claims.

While not necessarily agreeing with the Examiner's construction of the present claims, the Applicants have amended claim 1, and accordingly, claims 2-3, 5-6, 16-17 and 21, dependent thereon to clarify that the two or more components of the protein-based system are entrapped "within the matrix".

Since Preininger does not teach the entrapment a *multi-component* protein-based system *within* a biomolecule-compatible matrix the Applicants submit that claim 1, and accordingly, claims 2-3, 5-6, 16-17 and 21, which are all dependent on claim 1, are not anticipated by Preininger.

In light of the above, the Applicants request that the Examiner's rejection of claims 1-3, 5-6, 16-17 and 21 under 35 U.S.C. §102(e) be withdrawn.

35 U.S.C. §103(a)

The Examiner has rejected claims 1-3, 5-7, 10 and 16-21 under 35 U.S.C. §103(a) as being obvious over Preininger as applied to claims 1-3, 5-7, 16-18 and 21 above, in view of Rubino (US Patent No. 6,584,259) and further in view of Ramsay et al. (US Patent No. 6,376,181). The Applicants respectively traverse this rejection.

The Examiner contends that Preininger teaches a sol gel matrix for the immobilization of biomolecules but does not teach the preparation of sol gels using sodium silicate as required by claim 10 of the present application or the modification of the glass microarray with glycidoxyaminopropyltrimethoxysilane (GPS) as required by claims 19 and 20 of the present application. The Examiner contends that the preparation of sol gels from sodium silicate is taught by Rubino and the modification of a glass microarray surface with GPS is taught by Ramsay et al., accordingly it would have been obvious to combine the teachings of Preininger with those of Rubino and Ramsay et al. to arrive at the invention as claimed in these claims.

As argued above, the Applicants submit that Preininger does not teach the entrapment a *multi-component* protein-based system *within* a biomolecule-compatible matrix and this deficiency is not made up in the art by either Rubino or Ramsay et al. Accordingly, the Applicants submit that claims 1-3, 5-7, 10 and 16-21 under 35 U.S.C. §103(a) as being obvious over Preininger as applied to claims 1-3, 5-7, 16-18 and 21 above, in view of Rubino (US Patent No. 6,584,259) and further in view of Ramsay et al. (US Patent No. 6,376,181).

In light of the above, the Applicants request that the Examiner's rejection of claims 1-3, 5-7, 10 and 16-21 under 35 U.S.C. §103(a) be withdrawn.

The Examiner has rejected claims 1-3 and 9-21 under 35 U.S.C. §103(a) as being obvious over Um et al. as applied to claims 1-3, 9, 11-18 and 21 above, in view of Rubino (US Patent No. 6,584,259) and further in view of Ramsay et al. (US Patent No. 6,376,181). The Applicants respectively traverse this rejection.

The Examiner contends that Um et al. teach a sol gel matrix for the immobilization of biomolecules but does not teach the preparation of sol gels using sodium silicate as required by claim 10 of the present application or the modification of the glass microarray with glycidoxyaminopropyltrimethoxysilane (GPS) as required by claims 19 and 20 of the present application. The Examiner contends that the preparation of sol gels from sodium silicate is taught by Rubino and the modification of a glass microarray surface with GPS is taught by Ramsay et al., accordingly it would have been obvious to combine the teachings of Um et al. with those of Rubino and Ramsay et al. to arrive at the invention as claimed in these claims.

As argued above, the Applicants submit that Um et al. do not teach the entrapment a *multi-component* protein-based system *within* a biomolecule-compatible matrix and this deficiency is not made up in the art by either Rubino or Ramsay et al. Accordingly, the Applicants submit that claims 1-3 and 9-21 under 35 U.S.C. §103(a) as being obvious over Um et al. as applied to claims 1-3, 9, 11-18 and 21 above, in view of Rubino (US Patent No. 6,584,259) and further in view of Ramsay et al. (US Patent No. 6,376,181).

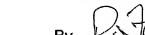
In light of the above, the Applicants request that the Examiner's rejection of claims 1-3 and 9-21 under 35 U.S.C. §103(a) be withdrawn.

In view of the foregoing arguments, we respectfully submit that the application is in order for allowance and early indication of that effect is respectfully requested.

Should the Examiner deem it beneficial to discuss the application in greater detail, the Examiner is invited to contact the undersigned by telephone at (416) 957-1683 at the Examiner's convenience.

Respectfully submitted,

BERESKIN & PARR

By 
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